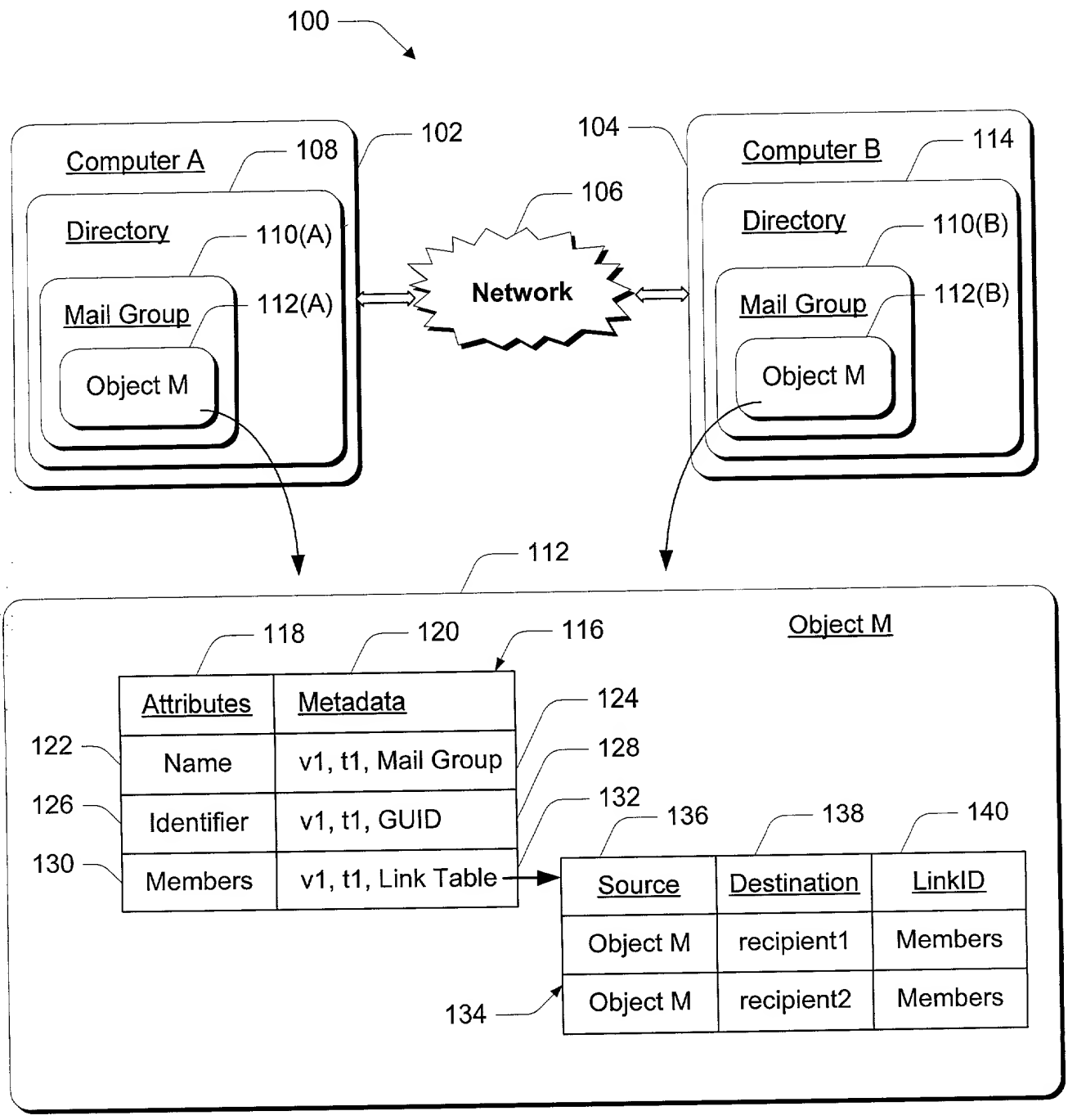

Fig. 1
Prior Art

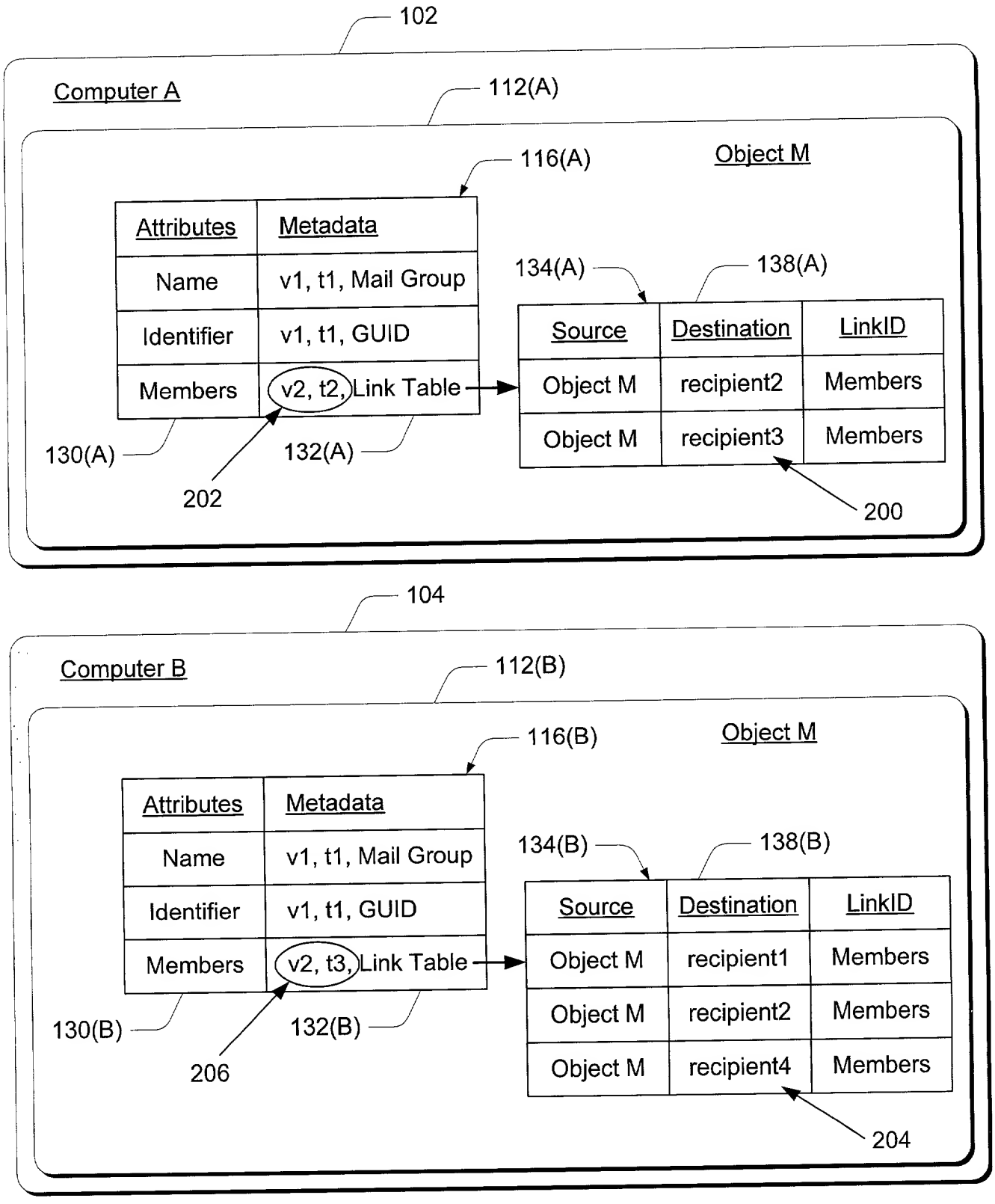

Fig. 2
Prior Art

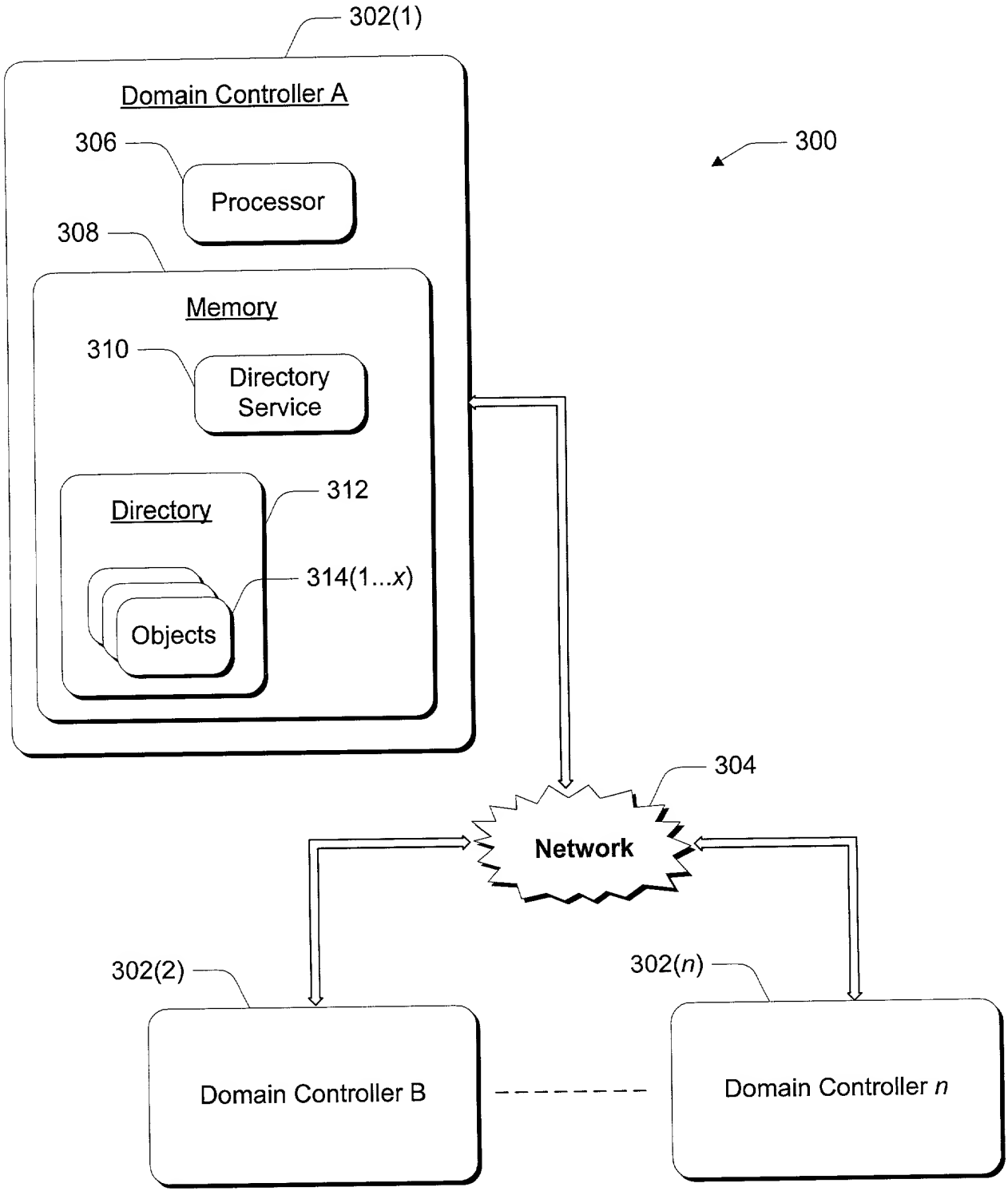
302(1)
Domain Controller A
306
Processor
308
Memory
310
Directory Service
Directory
312
314(1...x)
Objects
300
304
Network
302(2)
Domain Controller B
302(n)
Domain Controller n

Fig. 3

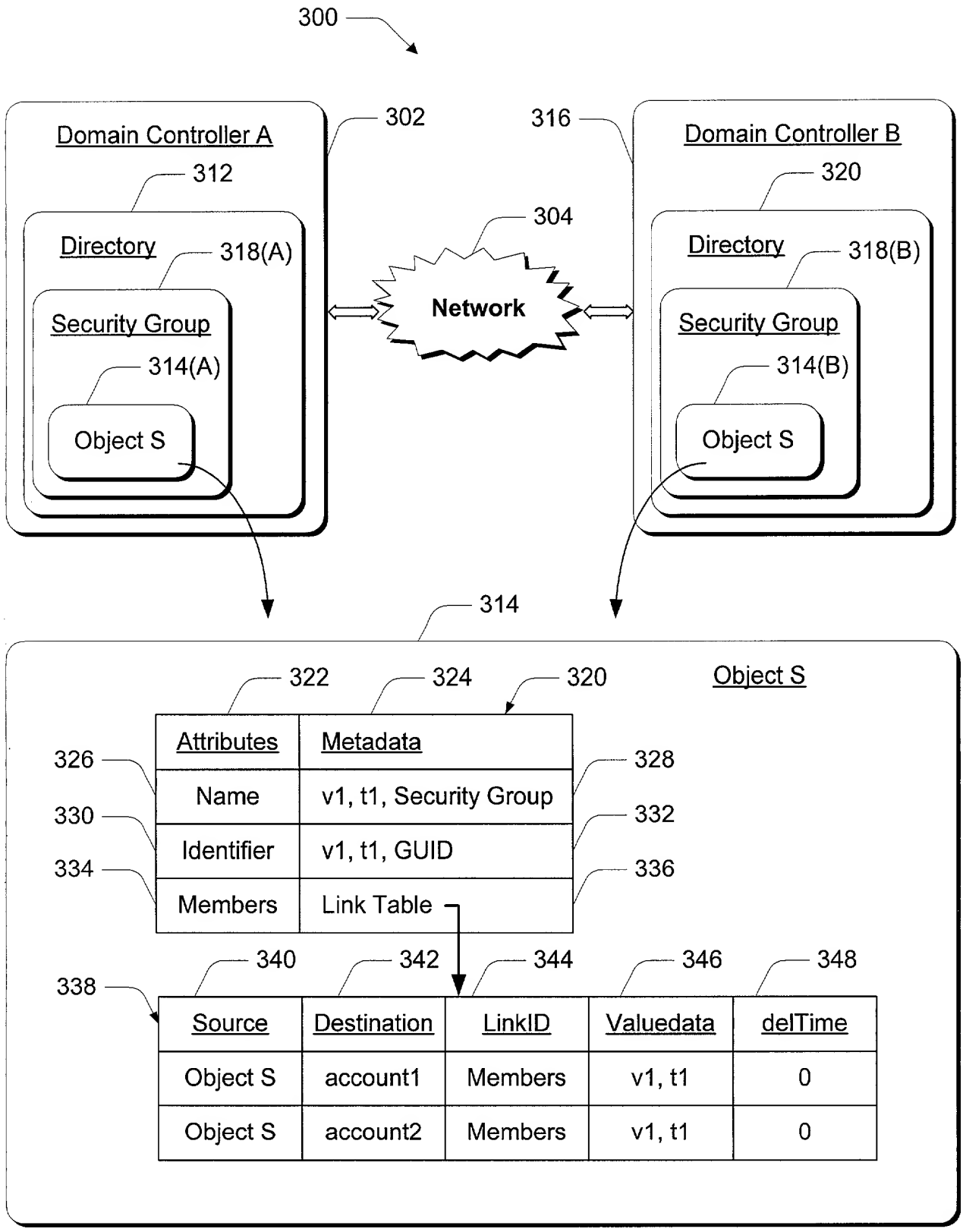
300
Domain Controller A
302
312
Directory
318(A)
Security Group
314(A)
Object S
304
Network
316
Domain Controller B
320
Directory
318(B)
Security Group
314(B)
Object S
314
Object S
322
324
320
Attributes
Metadata
326
Name
v1, t1, Security Group
328
330
Identifier
v1, t1, GUID
332
334
Members
Link Table
336
338
340
342
344
346
348
Source
Destination
LinkID
Valuedata
delTime
Object S
account1
Members
v1, t1
0
Object S
account2
Members
v1, t1
0

Fig. 4

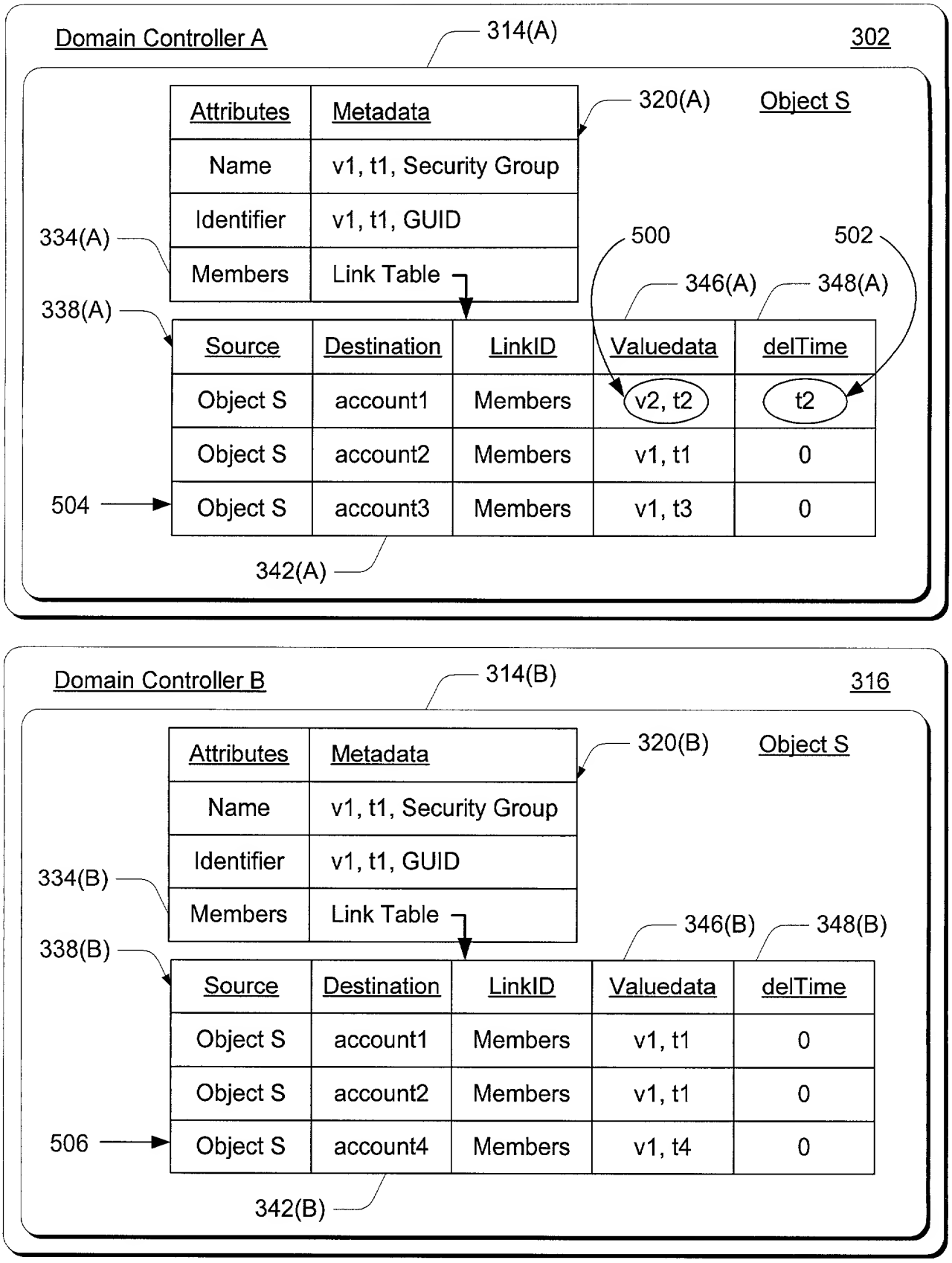
Domain Controller A
314(A)
302
Attributes
Metadata
320(A)
Object S
Name
v1, t1, Security Group
Identifier
v1, t1, GUID
Members
Link Table
334(A)
500
502
346(A)
348(A)
338(A)
Source
Destination
LinkID
Valuedata
delTime
Object S
account1
Members
v2, t2
t2
Object S
account2
Members
v1, t1
0
504
Object S
account3
Members
v1, t3
0
342(A)
Domain Controller B
314(B)
316
Attributes
Metadata
320(B)
Object S
Name
v1, t1, Security Group
Identifier
v1, t1, GUID
334(B)
Members
Link Table
346(B)
348(B)
338(B)
Source
Destination
LinkID
Valuedata
delTime
Object S
account1
Members
v1, t1
0
Object S
account2
Members
v1, t1
0
506
Object S
account4
Members
v1, t4
0
342(B)

Fig. 5

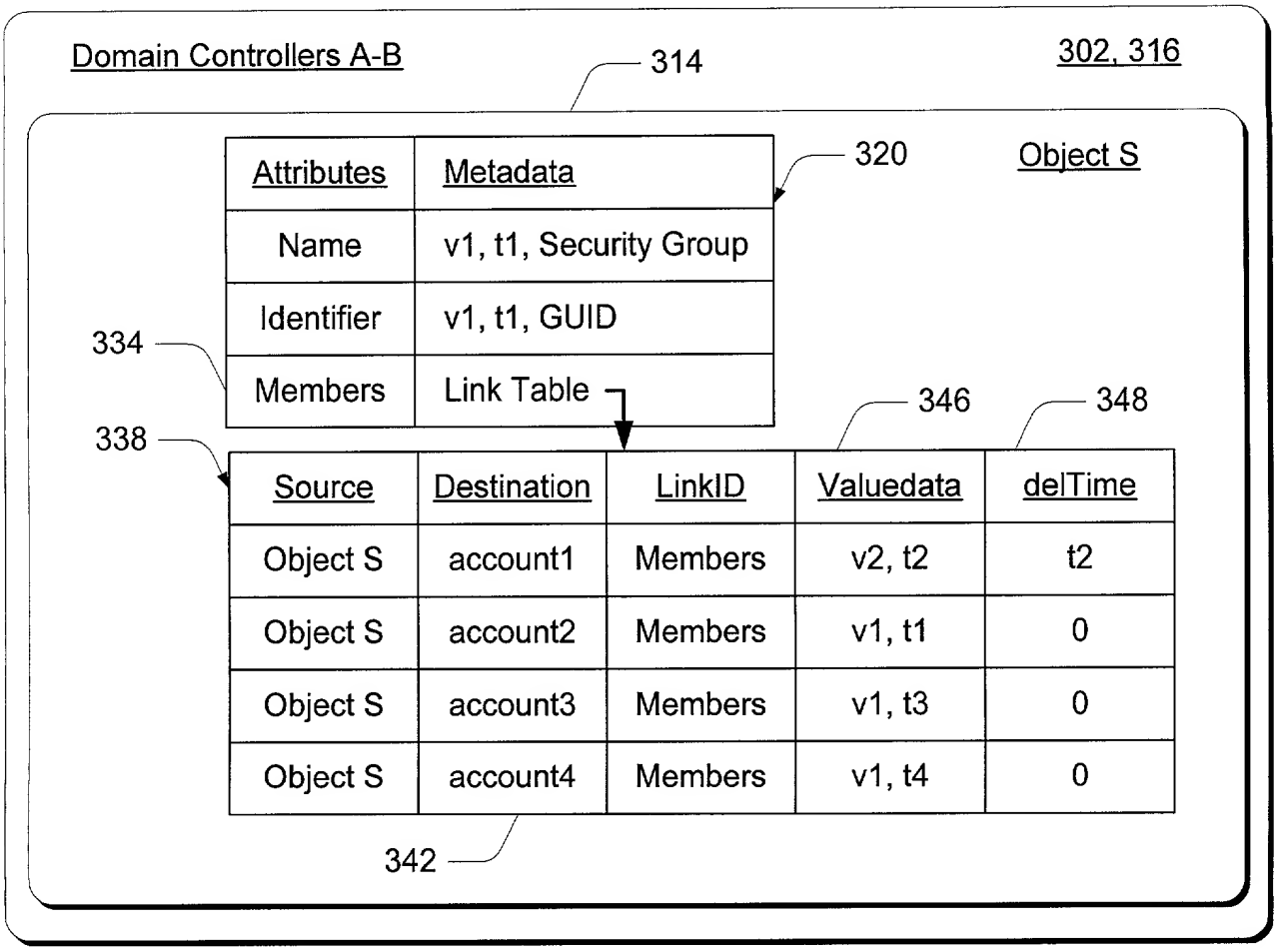
Domain Controllers A-B
314
302, 316
Attributes
Metadata
320
Object S
Name
v1, t1, Security Group
Identifier
v1, t1, GUID
334
Members
Link Table
346
348
338
Source
Destination
LinkID
Valuedata
delTime
Object S
account1
Members
v2, t2
t2
Object S
account2
Members
v1, t1
0
Object S
account3
Members
v1, t3
0
Object S
account4
Members
v1, t4
0
342

Fig. 6

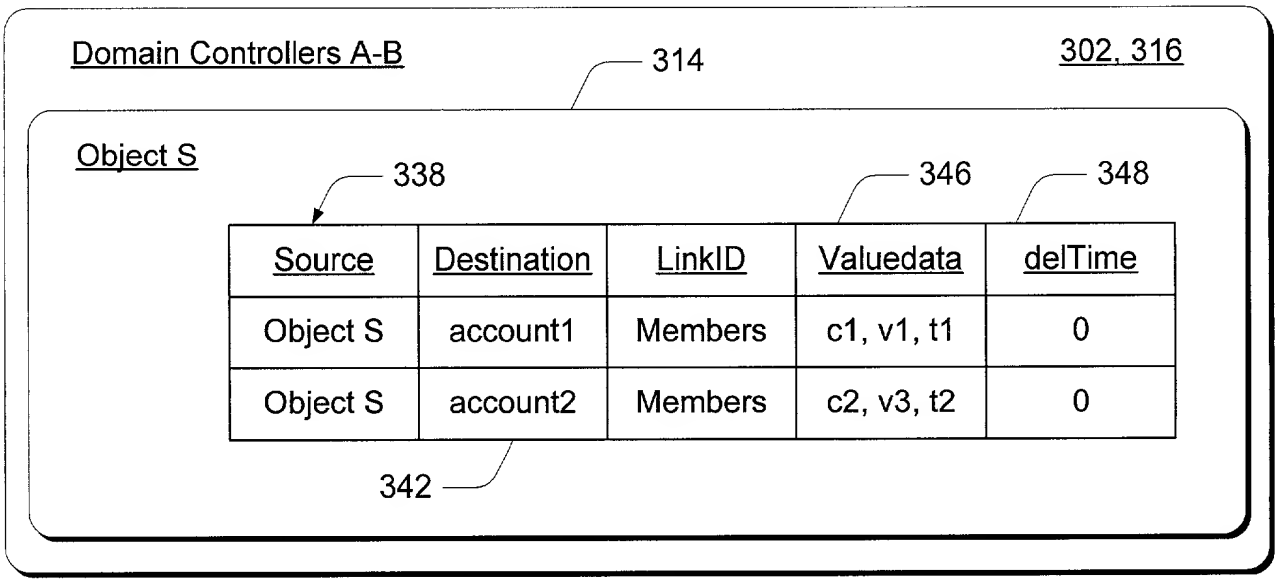
Domain Controllers A-B
314
302, 316
Object S
338
346
348
Source
Destination
LinkID
Valuedata
delTime
Object S
account1
Members
c1, v1, t1
0
Object S
account2
Members
c2, v3, t2
0
342

Fig. 7

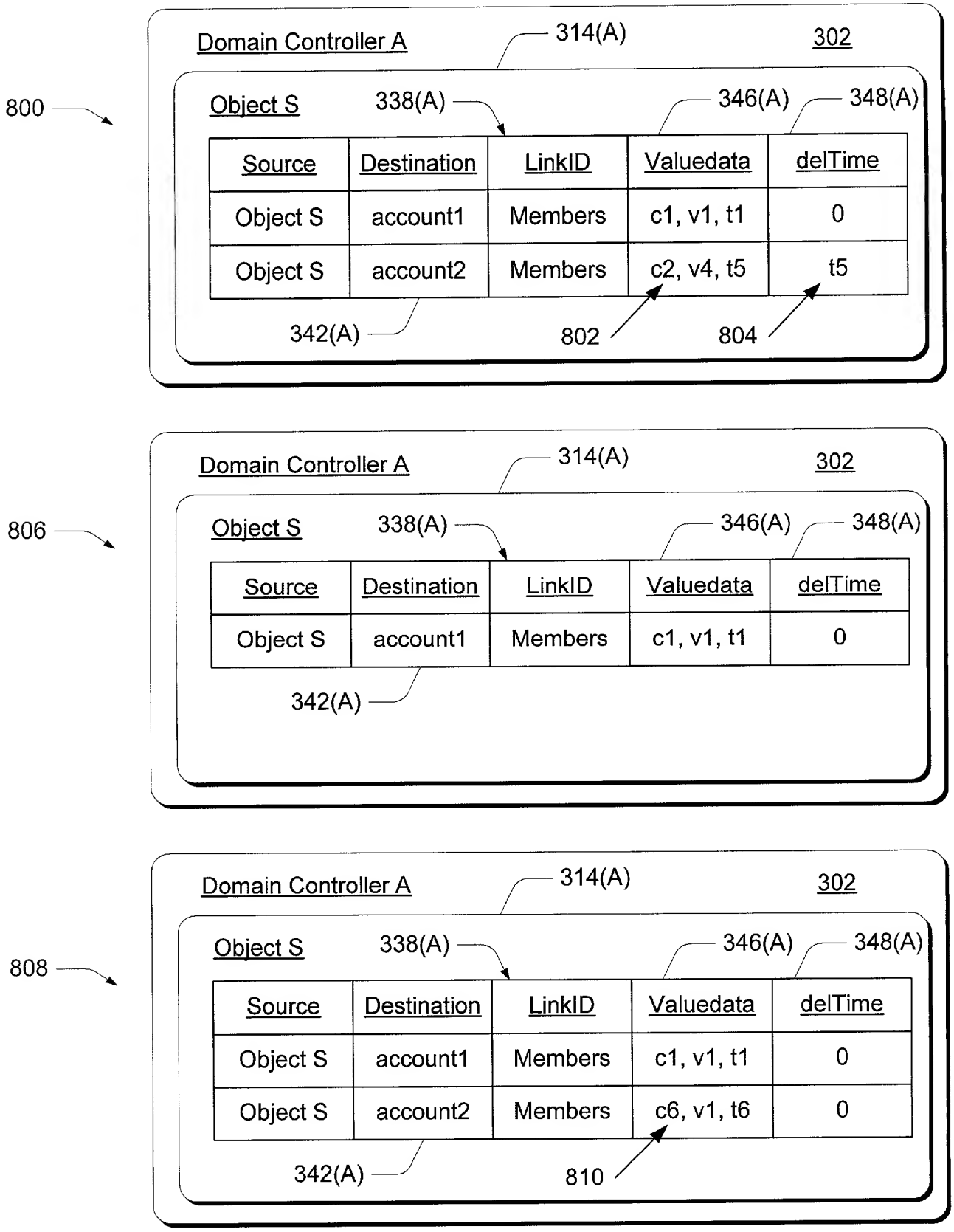
800
Domain Controller A
314(A)
302
Object S
338(A)
346(A)
348(A)
Source | Destination | LinkID | Valuedata | delTime
Object S | account1 | Members | c1, v1, t1 | 0
Object S | account2 | Members | c2, v4, t5 | t5
342(A)
802
804
806
Domain Controller A
314(A)
302
Object S
338(A)
346(A)
348(A)
Source | Destination | LinkID | Valuedata | delTime
Object S | account1 | Members | c1, v1, t1 | 0
342(A)
808
Domain Controller A
314(A)
302
Object S
338(A)
346(A)
348(A)
Source | Destination | LinkID | Valuedata | delTime
Object S | account1 | Members | c1, v1, t1 | 0
Object S | account2 | Members | c6, v1, t6 | 0
342(A)
810

Fig. 8

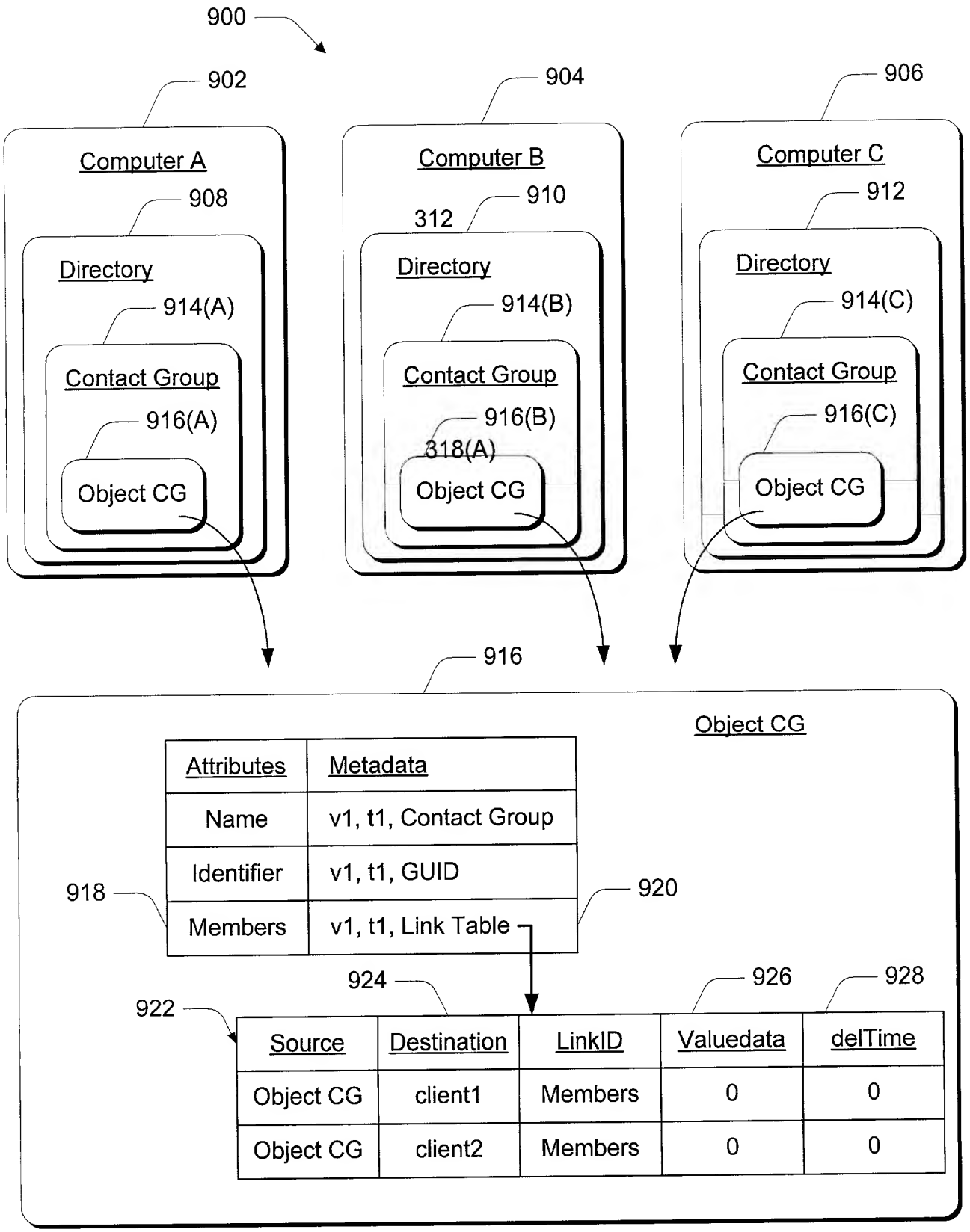
900
902
Computer A
908
Directory
914(A)
Contact Group
916(A)
Object CG
904
Computer B
910
312
Directory
914(B)
Contact Group
916(B)
318(A)
Object CG
906
Computer C
912
Directory
914(C)
Contact Group
916(C)
Object CG
916
Object CG
Attributes
Metadata
Name
v1, t1, Contact Group
Identifier
v1, t1, GUID
Members
v1, t1, Link Table
918
920
922
924
926
928
Source
Destination
LinkID
Valuedata
delTime
Object CG
client1
Members
0
0
Object CG
client2
Members
0
0

Fig. 9

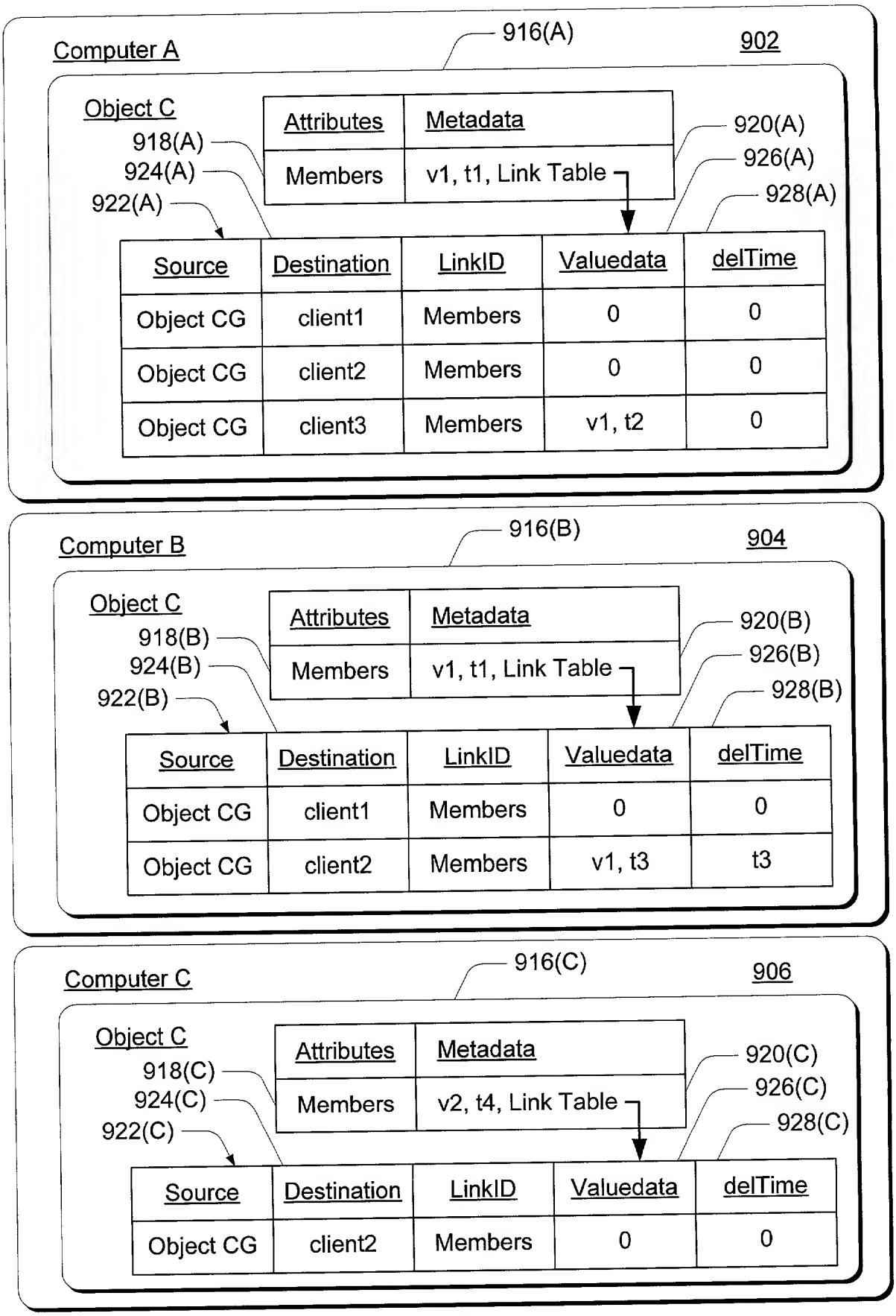
Computer A
916(A)
902
Object C
Attributes
Metadata
Members
v1, t1, Link Table
920(A)
926(A)
928(A)
918(A)
924(A)
922(A)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client1
Members
0
0
Object CG
client2
Members
0
0
Object CG
client3
Members
v1, t2
0
Computer B
916(B)
904
Object C
Attributes
Metadata
Members
v1, t1, Link Table
920(B)
926(B)
928(B)
918(B)
924(B)
922(B)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client1
Members
0
0
Object CG
client2
Members
v1, t3
t3
Computer C
916(C)
906
Object C
Attributes
Metadata
Members
v2, t4, Link Table
920(C)
926(C)
928(C)
918(C)
924(C)
922(C)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client2
Members
0
0

Fig. 10

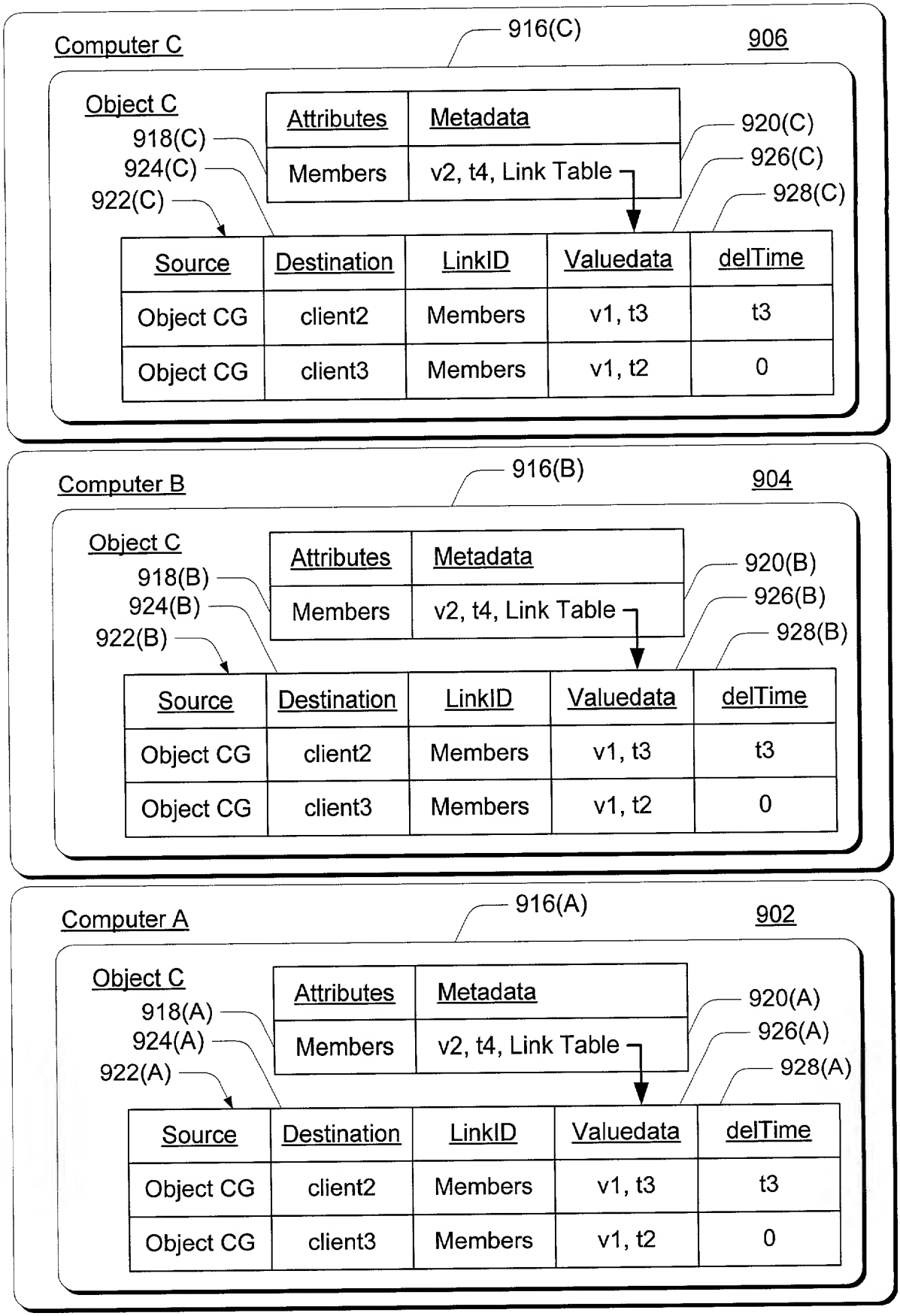
Computer C
916(C)
906
Object C
Attributes
Metadata
Members
v2, t4, Link Table
918(C)
924(C)
922(C)
920(C)
926(C)
928(C)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client2
Members
v1, t3
t3
Object CG
client3
Members
v1, t2
0
Computer B
916(B)
904
Object C
Attributes
Metadata
Members
v2, t4, Link Table
918(B)
924(B)
922(B)
920(B)
926(B)
928(B)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client2
Members
v1, t3
t3
Object CG
client3
Members
v1, t2
0
Computer A
916(A)
902
Object C
Attributes
Metadata
Members
v2, t4, Link Table
918(A)
924(A)
922(A)
920(A)
926(A)
928(A)
Source
Destination
LinkID
Valuedata
delTime
Object CG
client2
Members
v1, t3
t3
Object CG
client3
Members
v1, t2
0

Fig. 11

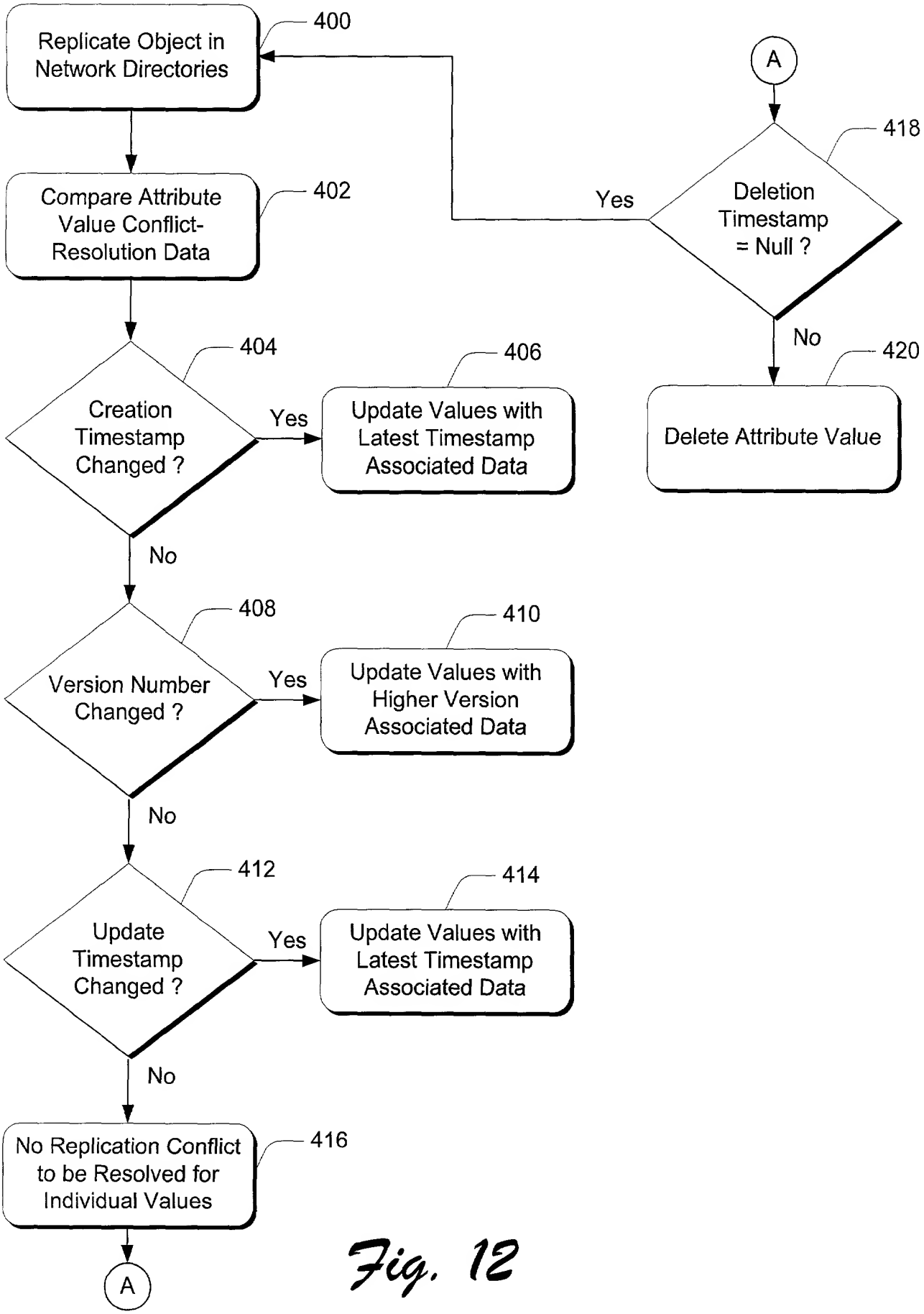
Replicate Object in Network Directories
400
Compare Attribute Value Conflict-Resolution Data
402
Creation Timestamp Changed ?
404
Yes
Update Values with Latest Timestamp Associated Data
406
No
Version Number Changed ?
408
Yes
Update Values with Higher Version Associated Data
410
No
Update Timestamp Changed ?
412
Yes
Update Values with Latest Timestamp Associated Data
414
No
No Replication Conflict to be Resolved for Individual Values
416
A
A
Deletion Timestamp = Null ?
418
Yes
No
Delete Attribute Value
420

Fig. 12

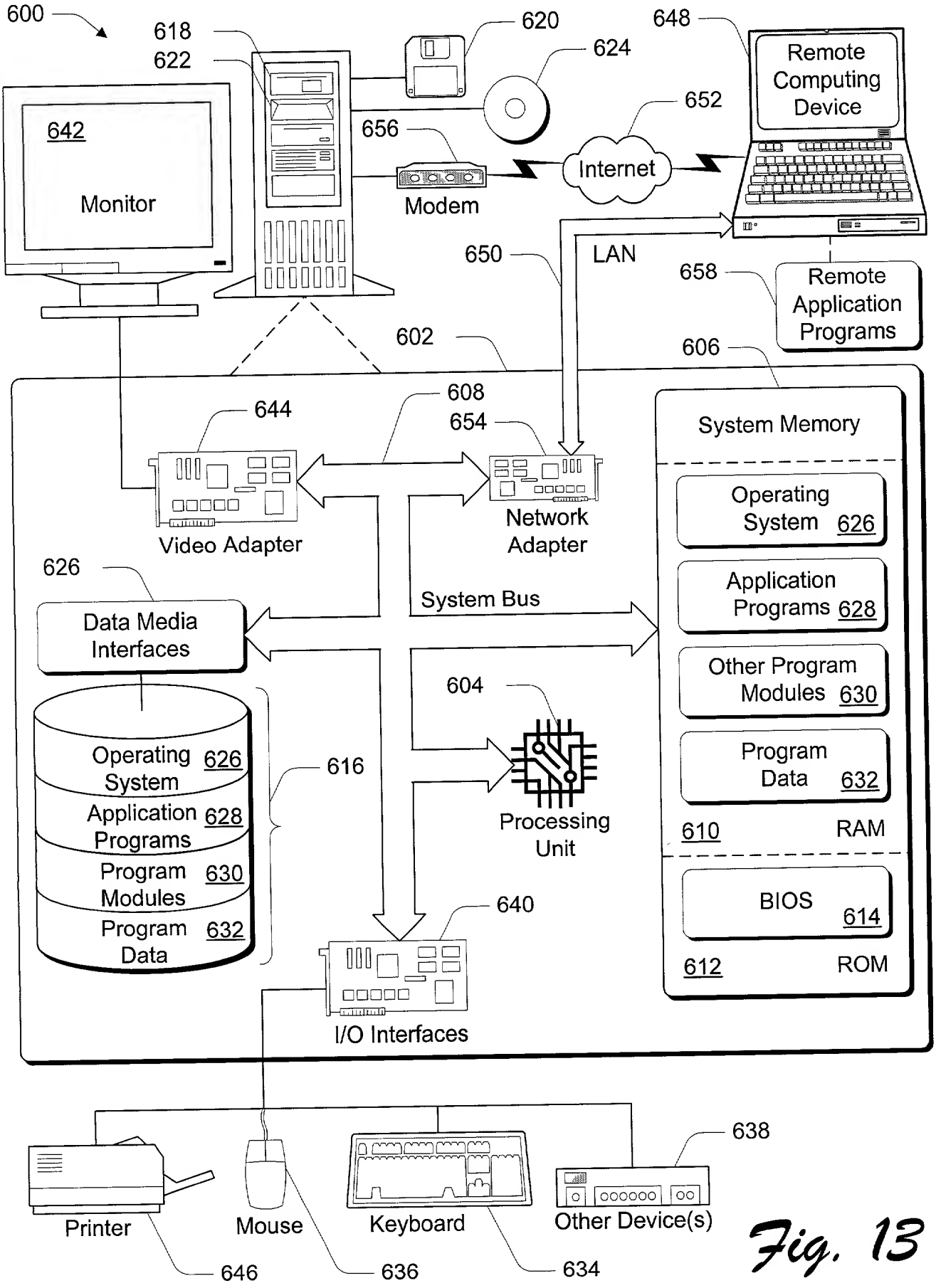
600
618
622
620
624
648
Remote Computing Device
652
642
Monitor
656
Modem
Internet
650
LAN
658
Remote Application Programs
602
606
644
608
654
System Memory
Video Adapter
Network Adapter
Operating System 626
Application Programs 628
Other Program Modules 630
Program Data 632
626
Data Media Interfaces
System Bus
604
Processing Unit
616
Operating System 626
Application Programs 628
Program Modules 630
Program Data 632
610
RAM
640
BIOS 614
612
ROM
I/O Interfaces
638
Printer
Mouse
Keyboard
Other Device(s)
646
636
634

Fig. 13